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Industrial Environmental Research
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Project Summary

COMPLETED
ORIGINAL

VOC Emissions Control Technologies for Ship Painting Facilities

J. W. Meredith, M. Moskowitz, J. G. Kresky, and D. Harrison

The U.S. Environmental Protection Agency has the responsibility of reducing the levels of Volatile Organic Compound (VOC) emissions from the nation's stationary and mobile sources. This project was directed at assessing the levels of VOC emissions from ship painting operations with the intent of determining the need for research activity in this industry. A secondary objective was to identify control technologies or new technology concepts which may be used or developed and demonstrated that lowers the levels of VOC emissions during ship painting.

This Project Summary was developed by EPA's Industrial Environmental Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Ship painting represents a potentially significant stationary source of VOC emissions. Estimates indicate that an average of 64 metric tons (70 short tons) are emitted each day from the 76 largest ship facilities in the United States. This study is aimed at ship and metal structure painting with the objectives of defining and characterizing emissions from these sources. Only shipyards with facilities for ships of 92 meters (300 ft) and 1800 metric tons (2000 tons) or larger were considered.

The investigators reviewed the literature and made direct contact with the ship building and repairing industry to develop conclusions and recommendations on control technologies and concepts.

Ship Painting

Volatile Organic Compound (VOC) emissions from ship painting were determined to average 28 to 65 metric tons (31 to 72 short tons) per day from the 76 largest shipyards in the U.S. Approximately 50 percent of the VOC emissions are generated during the painting of U.S. military vessels for which Military Specification, (Mil. Spec.), paints are dictated to be used. Mil. Spec. paints typically contain high volumes of volatile paint solvents. These paints, however, represent only 30 percent of the total paint consumption.

VOC Control

VOC emission control strategies found most applicable to ship painting were paint reformulation and increased transfer efficiency of the painting equipment. These approaches are being actively pursued by the ship painting industry primarily due to economics rather than reduction of VOC emissions.

There is no known use or consideration of the use of add-on control equipment in this industry. Further reductions of VOC emissions will come primarily from increased use of low solvent paints and high efficiency painting equipment, respectively.

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***Charles H. Darvin** is the EPA Project Officer (see below).*
The complete report, entitled "VOC Emissions Control Technologies for Ship Painting Facilities," (Order No. PB 81-226 268; Cost: $8.00, subject to change) will be available only from:

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650

The EPA Project Officer can be contacted at:

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